



United States Department of the Interior

OFFICE OF THE SECRETARY

OFFICE OF ENVIRONMENTAL POLICY AND COMPLIANCE

Richard B. Russell Federal Building

75 Spring Street, S.W.

Atlanta, Georgia 30303

November 3, 2000

ER-00/697

Colonel Robert Crear,
District Engineer - Vicksburg District
U. S. Army Corps of Engineers
4115 Clay Street
Vicksburg, MS 39183-3435

Dear Colonel Crear:

The Department of the Interior has reviewed the Yazoo Backwater Area Reformulation Report - Flood Control, Mississippi River and Tributaries (Supplement No. 1 to the 1982 FEIS), Humphreys, Issaquena, Sharkey, Warren, Washington, and Yazoo Counties, Mississippi, as requested.

The enclosed comments constitute the comments of the Department. They relate primarily to fish and wildlife resources, and how the proposed project will impact them. If you have any questions concerning these comments, please contact Bruce Bell, Regional National Environmental Policy Act (NEPA) Coordinator, Fish and Wildlife Service (FWS), at 404/679-7089, or Keith Taniguchi, Chief, Division of Habitat Conservation and Environmental Contaminants, FWS, at 404/679-7223

Thank you for the opportunity to review and comment on the Yazoo Backwater Area Reformulation Report. I can be reached at 404/331-4524.

Sincerely,

A handwritten signature in dark ink, reading "James H. Lee".

James H. Lee
Regional Environmental Officer

Enclosure

YAZOO BACKWATER AREA REFORMULATION REPORT AND ASSOCIATED DRAFT SUPPLEMENT NUMBER 1 TO THE 1982 FINAL EIS

ER-00/697

Introduction

Both documents address the remaining unconstructed features of the Yazoo Backwater Area Project in the Yazoo Basin, Mississippi. The project area is located in west-central Mississippi and includes portions of Humphreys, Issaquena, Sharkey, Warren, Washington, and Yazoo Counties, as well as a very small portion of Madison Parish, Louisiana. The Reformulation Report and its appendices are incorporated by reference in the DSEIS; therefore, the following Fish and Wildlife Service (Service) comments on the DSEIS are likewise directed, by reference, at the relevant portions of those supporting documents.

The general comments identify key areas of concern that together constitute an overview of our most compelling issues and concerns associated with the environmental compliance documents.

These issues and areas of concern are then substantiated and explained at length in the specific comments. Because of the breadth and complexity of the comments, a summary is also included.

General Comments

We have determined the compliance documentation is inadequate and does not meet the intended purpose of the Council on Environmental Quality's (CEQ) Implementing Regulations. Unsubstantiated justification for the selection of the recommended plan, a lack of explanation regarding analytical methods, use of inaccurate and inappropriate methodology, and inadequate evaluation and unequal treatment of alternatives, cast doubt on the DSEIS conclusions, and make it difficult to determine if every significant factor was considered in formulating the recommended plan. Additionally, that plan conflicts with the laws, regulations, policies and programs of other Federal agencies (e.g., the Service's Partners for Fish and Wildlife Program, the Department of Agriculture's Conservation Reserve and Wetland Reserve Programs, etc.) operating in the project area.

The formulation of NEPA compliance documentation is guided by Implementing Regulations (40 CFR 1500-1508) and additional guidance developed by CEQ (46 Fed. Reg. 18026), other environmental legislation, agency specific NEPA compliance and planning guidance, and input from other agencies and the public. The Service is concerned the Corps did not adequately follow these various mandates, nor address comments and planning concerns from the Service and the public, in formulating the proposed plan and its associated compliance documentation.

In our view, the DSEIS fails to fulfill the purpose of CEQ's Implementing Regulations. According to the DSEIS, its stated purpose is to present the reevaluation of environmental

effects of the Yazoo Backwater Area Project. The DESIS further states that it is analytical, self-supporting and informs decision makers. CEQ's guidance regarding the purpose of an EIS (Section 1502.1 and question 25) states in part:

"It shall provide full and fair discussion of significant environmental impacts and shall inform decision makers and the public of the reasonable alternatives which would avoid or minimize adverse impacts or enhance the quality of the human environment... Statements shall be concise, clear and to the point, and shall be supported by evidence that the agency has made the necessary environmental analyses... The body of the EIS should be a succinct statement of all the information on environmental impacts and alternatives that the decision maker and the public need, in order to make the decision and to ascertain that every significant factor has been examined."

The Service cannot support the Corps' position that the recommended plan represents a balanced approach to meeting the economic and environmental needs of the Yazoo Backwater area. Accordingly, we do not concur with the assertion that the document is analytical, self-supporting and informs decision makers. As substantiated in the detailed comments below, the document is disorganized and, because of inadequate treatment of alternatives, does not substantiate the selection of the recommended plan. In fact, it hinders decision makers and the public from ascertaining the actual impacts of the proposed plan, as well as the six remaining plans included in the final evaluation suite. The main report and data appendices are incorporated by reference as part of the DSEIS and the reader is urged to review those appendices for specific methodologies and detailed information. Based upon our review, those methodologies and detailed information are often either absent, or are not presented in a clear and comprehensible fashion.

Because of their procedural shortcomings, fundamental failure to meet accepted planning criteria and inaccurate or inappropriate methodologies, we find that the documents are inadequate and do not comply with the spirit and intent of NEPA or the Implementing Regulations promulgated by CEQ. The NEPA established policy, set goals, and provided the means for all Federal agencies to follow a basic charter for protection of the environment. Section 102 of the NEPA established "action forcing" provisions to make sure that Federal agencies follow the spirit and intent of the NEPA. Section 1500.1 of CEQ's Implementing Regulations discusses the basic purpose of the regulations which were promulgated to implement section 102 of the NEPA. Those regulations outline what Federal agencies must do to comply with the procedures and achieve the goals established in the NEPA. Part (b) of Section 1500.1 requires that environmental information is made available to decision makers and the public before decisions are made and actions are taken. Specifically, part (b) states:

"(b) NEPA procedures must insure that environmental information is available to public officials and citizens before decisions are made and before actions are taken. The information must be of high quality. Accurate scientific analysis, expert agency comments, and public scrutiny are essential to implementing NEPA. Most important, NEPA documents must concentrate on the issues that are truly significant to the action in question, rather than amassing needless detail."

Section 1500.1 goes on further to discuss the basic purpose of NEPA compliance documentation and the CEQ regulations. Part (c) states:

“(c) Ultimately, of course, it is not better documents but better decisions that count. NEPA’s purpose is not to generate paperwork—even excellent paperwork—but to foster excellent action. The NEPA process is intended to help public officials make decisions that are based on understanding of environmental consequences, and take actions that protect, restore, and enhance the environment. These regulations provide the direction to achieve this purpose.”

Substantial inadequacies in the DSEIS preclude a fully informed and aware decision; therefore, the desired outcome of the NEPA compliance process cannot be achieved. The procedural inadequacies of the DSEIS collectively result in a document that focuses on the justification of a large 14,000 cfs pumping plant to drain low lying, marginal farmed wetlands and forested wetlands. The document repeatedly points out that the selected 14,000 cfs pump proposal is more cost-effective and beneficial to the environment than larger, more environmentally damaging pump plan alternatives, rather than evaluating and disclosing the environmental effects of the recommended plan. The lack of detailed analyses and comparisons of the selected plan to less environmentally damaging nonstructural or combined structural/nonstructural alternatives conflict with the spirit and intent of NEPA, other environmental legislation, CEQ’s Implementing Regulations and the Corps’ own planning guidance.

Following the 1993 spring flooding on the Missouri and Mississippi Rivers, the President’s Interagency Floodplain Management Review Committee Report called for a real and renewed emphasis on nonstructural approaches to flooding that would enhance the floodplain environment and provide for natural floodwater storage. In brief and unsubstantiated discussions, the DSEIS dismisses nonstructural plans and approaches that restore frequently flooded areas within the two-year floodplain as economically infeasible. The DSEIS then refers the reader to a single table in the Main Report that shows the costs, benefits and cost-benefit ratios of floodproofing, structure raising, demolition of structures in the project area, etc. No detailed explanation of the methodology, or verification of conclusions, accompany that Economic Analysis Table.

Part 1502.24 of CEQ’s regulations clearly outline the necessity to include discussions of methodology in the document. It reads as follows:

“Agencies shall insure the professional integrity, including scientific integrity, of the discussions and analyses in environmental impact statements. They shall identify any methodologies used and shall make explicit reference by footnote to the scientific and other sources relied upon for conclusions in the statement. An agency may place discussion of methodology in an appendix.”

Throughout the DSEIS, summary data and observations that are based upon analyses in separate appendices are presented, and conclusions are drawn absent any supporting discussions of such methodologies or rationales. Table footnotes are often the only discussion of methodology presented. Likewise, review of referenced appendices frequently

reveals a discussion of how the raw data were produced, but there is rarely a discussion of how the raw data from the appendices were used to produce the information and conclusions presented in the body of the DSEIS.

The DSEIS also contains several examples of inaccurate and inappropriate evaluation methodologies. For example, the DSEIS discussion of alternative screening, which occurred during the scoping and alternative formulation process, concludes that the Environmental Protection Agency's (EPA) contracted report (Shabman Report) on the economic analysis of non-structural alternatives was unreasonable and did not meet study objectives. Therefore, the non-structural approach contained in that report was dropped from further consideration. This approach and other plans were screened from further consideration in a manner that contradicts the CEQ's regulations.

In 1981, CEQ published in the Federal Register further guidance regarding their NEPA regulations in the form of the forty most asked questions concerning those regulations. Question 2 of those forty questions addressed the analysis of alternatives outside the jurisdiction of the agency. The second part of that question and the answer provided by CEQ read as follows:

"2b. Must the EIS analyze alternatives outside the jurisdiction or capability of the agency or beyond what Congress has authorized?

A. An alternative that is outside the legal jurisdiction of the lead agency must still be analyzed in the EIS if it is reasonable. A potential conflict with local or federal law does not necessarily render an alternative unreasonable, although such conflicts must be considered. Section 1506.2(d). Alternatives that are outside the scope of what Congress has approved or funded must still be evaluated in the EIS if they are reasonable, because the EIS may serve as the basis for modifying the Congressional approval or funding in light of NEPA's goals and policies. Section 1500.1(a)."

The Corp's principal reasons for screening out the EPA approach centered on a specific policy decision by the Office of the Chief of Engineers (OCE) that the economic benefits of reforestation for carbon sequestration and nutrient load reduction could not be used to economically justify a non-structural flood damage reduction alternative. No analysis was presented in the DSEIS to substantiate OCE's policy decision. Given the burgeoning growth of the carbon sequestration reforestation market world-wide, we do not concur with the Corps' rationale that such benefit categories are unquantifiable or invalid, particularly in view of their fundamental potential to address the issue of global climate change.

Thus, reasonable alternatives not within the jurisdiction of the Corps were not given substantial treatment in the DSEIS so that a reviewer could evaluate their comparative merits (Part 1502.14). In light of the increasing national emphasis on restoration of floodplains and natural flood water storage, the Service recommends that serious consideration and analysis be given to nontraditional, nonstructural approaches similar to those presented in the Shabman Report.

We are also concerned that differing techniques were utilized to quantify project impacts on terrestrial and aquatic resources. Terrestrial effects were evaluated considering all species life requirements and a single index was calculated to display project impacts. Conversely, impacts on aquatic resources were displayed calculated as two separate indices based on the spawning and rearing habitat requirements of those resources. The Corps, with no explanation, selected spawning impacts as the sole index to measure project effects on aquatic resources. This significant departure in analytical methodology from that used to evaluate terrestrial resources does not fully assess the projects impacts on aquatic resources. We recommend that analytical techniques should be similar, and that the spawning and rearing impacts be combined to present a comprehensive and valid determination of aquatic resource impacts.

The DSEIS briefly lists and describes all of the alternatives, but does not adequately evaluate, compare, and present their impacts. Instead, the document details the accomplishments as justification for selecting the recommended plan, Plan 5; erroneously emphasizing that it would not result in as much environmental damage as other plans in the final array of alternatives. Plan 7, envisioned by the Service to be a combination of structural and truly non-structural measures that would restore the natural values of the two-year floodplain through implementation of a spatially explicit non-structural flood damage reduction zone (NSFDRZ), would still utilize pumps to provide flood protection above the two-year floodplain. As presented in the DSEIS, that plan was incorrectly formulated and the Corps determined it was economically infeasible. Because of the lack of a detailed analysis of all alternatives, the reader has no clear basis for choosing among the plans. The Service recommends that all alternatives in the final array be correctly formulated (see following comment) and treated equally in the final document.

Section 1502.14 contains the most pointed guidance regarding the treatment of alternatives and is of primary importance. That section reads:

“This section is the heart of the environmental impact statement. Based on the information and analysis presented in the sections on the Affected Environment (Sec. 1502.15) and the Environmental Consequences (Sec. 1502.16), it should present the environmental impacts of the proposal and the alternatives in comparative form, thus sharply defining the issues and providing a clear basis for choice among options by the decision maker and the public. In this section agencies shall:

- (a) Rigorously explore and objectively evaluate all reasonable alternatives, and for alternatives which were eliminated from detailed study, briefly discuss the reasons for their having been eliminated.
- (b) Devote substantial treatment to each alternative considered in detail including the proposed action so that reviewers may evaluate their comparative merits.
- (c) Include reasonable alternatives not within the jurisdiction of the lead agency.
- (d) Include the alternative of no action.

- (e) Identify the agency's preferred alternative or alternatives, if one or more exists, in the draft statement and identify such alternative in the final statement unless another law prohibits the expression of such a preference.
- (f) Include appropriate mitigation measures not already included in the proposed action or alternatives."

Clearly, the Implementing Regulations require equal treatment of all alternatives in both the analysis and reporting phases of compliance document preparation in order to foster better decisions and comply with the national charter for protection of the environment.

CEQ's Implementing Regulations (1502.14) and clarifying questions (Question 7) clearly recognize the importance of accurately formulating and presenting alternatives; the guidance states in part:

"...it should present the environmental impacts of the proposal and the alternatives in comparative form, thus sharply defining the issues and providing a clear basis for choice among options by the decision maker and the public."

The DSEIS did not accurately present, nor did it adequately evaluate the combined structural/non-structural alternative advanced by the Service in a December 15, 1999, letter to the Corps. Specifically, that alternative should have been formulated to include four basic elements recommended by the Service; only two of which were accurately included in plan 7 of the final suite of alternatives. Instead, the Corps failed to incorporate a spatially explicit NSFDRZ – the NSFDRZ was to include all lands within the two-year floodplain, not merely those below 91 feet, National Geodetic Vertical Datum (NGVD). The DSEIS also failed to include a coordinated plan of operation for the proposed pumping plant and flood gates specifically designed to balance the dual objectives of floodplain restoration below the two-year event and structural flood damage reduction above the two-year event.

Primarily due to inaccuracies in the impact analyses, the DSEIS failed to accurately depict project impacts associated with each alternative in the final array. Moreover, those analyses did not correctly incorporate or evaluate the data provided by the Service to substantiate its alternative future without-project scenario. In a September, 1999, planning aid report, the Service provided to the Vicksburg Corps District an alternate description of existing conditions related to land use in the study area, and a forecast of changes in those conditions over the future without-project. That report reiterated the fact that the Service did not concur with the District's projection that existing conditions would remain constant throughout the future without-project. Additionally, the Service requested that, in the absence of agreement on future without-project conditions, both alternative scenarios be utilized in the evaluations of all flood damage-reduction alternatives, as required by the Corps' Principles and Guidelines. In essence, the Service requested that two differing no action alternatives be used in the analysis of project impacts. Our review of the Corp's treatment of the Service's "No Action" alternative and substantiating data revealed that the Corps' evaluation team misinterpreted the Service projections and inaccurately and improperly applied the data that were presented to them.

Because the Corps' future without-project land use projections are not substantiated and conflict with the current trend of wetland restoration in the project area, the Service continues to maintain that there is a substantial degree of risk and uncertainty that such a projection will result in significant underestimation of project impacts. This is a serious deficiency, because a description of baseline and the most likely future without condition are essential to an accurate evaluation and depiction of the impacts associated with all alternatives.

In effect, the "No Action" alternative serves as the basis against which all other alternatives are measured in order to properly compare alternatives and select a recommended plan. If a reviewer does not have a firm grasp of the existing conditions and the baseline projection, there would be no concept of the measurement units being applied in the analysis of impacts; thus, any analytical results would appear valid. It is only when the baseline and future without condition are well-defined and clearly illustrated that reliable and specific measurement of alternative impacts can be made, and decision makers can ascertain that every significant factor has been examined. These concerns should be addressed in the final document, which should clearly list current land use and proposed land use for each alternative in both tabular and spatial form. Doing so would more nearly follow CEQ's Implementing Regulations (1502.14), and clarifying question number 3, which respectively read in part:

"...(b) Devote substantial treatment to each alternative considered in detail including the proposed action so that reviewers may evaluate their comparative merits" and, "... (d) Include the alternative of no action." and specifically regarding the no action alternative, Question 3 states: "This analysis provides a benchmark, enabling decision makers to compare the magnitude of environmental effects of the action alternatives."

We are also concerned that in order to quantify the plan's effects on the environment, the DSEIS and supporting documents present erroneous information, as detailed in the specific comments that follow, in a manner that is misleading and confusing. As a result, the reader is left with no clear concept of the consequences pump operations will actually have on the Yazoo Backwater Area ecosystem. The final document should clearly identify the selected plan's effects on the environment.

Moreover, the indirect effects of the recommended plan are significant and are inadequately evaluated in the DSEIS. The presence of the largest pumping plant in the world would intensify and expand agriculture, induce additional flood damage-susceptible development, and substantially increase future disaster assistance and recovery costs. Regardless of the flood control benefits provided to those areas, implementation of the selected plan would perpetuate the historical, structural approach to agricultural drainage in the Mississippi Delta. In essence, implementation of the proposed plan will reduce, rather than increase, the economic and environmental sustainability of project-area land uses.

The manner and extent to which the recommended plan will conflict with other Federal policies in the project area (Part 1502.16, part (c)) are either not included, or they are incorrectly portrayed, in the DSEIS. The applicable part of CEQ's Implementing Regulations states:

“(c) Possible conflicts between the proposed action and the objectives of Federal, regional, State, and local (and in the case of a reservation, Indian tribe) land use plans, policies and controls for the area concerned. (See Sec. 1506.2(d).)”

As stated previously, Federal flood reduction policy is moving toward non-structural floodplain enhancement and natural flood water storage to achieve a sustainable balance between economic development and environmental conservation. The recommended plan (Plan 5) is a traditional, structural proposal that contains no non-structural flood damage reduction project features. Instead, the Corps’ proposal contains an inadequately formulated and largely nonviable environmental enhancement and mitigation component. The hydrology of wetlands subject to the Corps’ jurisdiction under the Clean Water Act would be significantly reduced by pump operations. As a result, and contrary to the Corps’ insistence that their regulatory program will protect those wetlands affected by reduced hydrology, those areas will become open to unregulated and unmitigated conversion to non-wetland uses. Accordingly, we believe that implementation of the recommended plan would conflict with Executive Orders on Floodplain Management and Wetlands. Contrary to conclusions in the DSEIS, the selected plan conflicts with federally sponsored conservation programs and partnerships including the North American Waterfowl Plan, Partners in Flight, Black Bear Conservation Committee, and various landowner-driven conservation programs, such as the Wetland Reserve and Conservation Reserve Programs administered by the U.S. Department of Agriculture. All of these conservation programs have the central goal of restoring a sustainable natural ecosystem in the lower Yazoo Basin. In our view, the selected plan represents a significant step in the opposite direction, inasmuch as it will substantially curtail --if not summarily end-- the current wetland restoration trend in the lower Yazoo Basin.

Part 1502.12 of CEQ’s Implementing Regulations states:

“Each environmental impact statement shall contain a summary which adequately and accurately summarizes the statement. The summary shall stress the major conclusions, areas of controversy (including issues raised by agencies and the public), and the issues to be resolved (including the choice among alternatives). The summary will normally not exceed 15 pages.”

The DSEIS does not contain a summary as outlined above. Instead, the document contains a brief abstract which, along with the first four sections of the document, describes and justifies the recommended plan. The statement made in the introduction regarding areas of controversy (page SEIS-2) states, “The controversy is whether the solution should be an entirely nonstructural approach, a combination structural and nonstructural approach, or an entirely structural approach.” We entirely disagree with the Corps’ gross over-simplification of the basis of controversy associated with this project. Actually, the historical shortcomings of single-purpose structural flood control projects, their adverse impacts to natural resources, and the nationally significant issues embodied by the proposed plan in terms of economic and ecological sustainability, more accurately and succinctly describe the remaining areas of controversy. The Service has developed a non-structural approach, in contrast to the Corps’ proposal. The Service’s approach and comprehensive planning goal for the Yazoo Backwater area were detailed in a December 15, 1999, letter to Mr. Douglas Kaimen

(Vicksburg District) and in a March 17, 2000, letter to Major General Phillip Anderson of the Mississippi Valley Division. The future of Federal flood reduction emphasizes nonstructural approaches that enhance the floodplain and utilize natural storage. The forgoing complexities and the full extent of the controversy should be discussed in the final document.

Specific Comments

Draft Supplement No. 1 to the 1982 Yazoo Area Pump Project Final Environmental Impact Statement

Page SEIS-1, para 2 - The first sentence of this paragraph states that the document is analytical, self-supporting, and informs decision makers and the public. The last sentence encourages the reader to reference the appendices for specific methodologies and detailed information which often do not exist, or that inadequately cover the subject matter.

Page SEIS-1, para 3 - This paragraph states that the selected plan represents a balanced approach to flood damage reduction and environmental opportunities in the Yazoo Backwater Area. That plan consists of a 14,000 cfs pumping plant and a goal to reforest 62,500 acres of wetlands below 91 feet, NGVD. The Service believes this statement is inaccurate; a balanced plan would restore the ecological functions and values within a designated and dedicated NSFDRZ (i.e., the two- year floodplain), below which, agriculture would remain a high risk land-use. Under that approach, the proposed pumps could be used to structurally reduce economic impacts of larger floods above the two-year event. A balanced plan would also fully acknowledge and consider economically and environmentally sustainable development in the context of the Project Design Flood.

Page SEIS-3, para 7 and 8 - These paragraphs state that except for remaining compliance requirements as listed in Table SEIS-1, there are no unresolved issues for this stage of planning. The Service believes significant issues remain unresolved, and recommends that alternatives which comprehensively consider the economic and environmental needs of the project area be reformulated and analyzed (e.g., the designation and dedication of a NSFDRZ). By the time the final EIS is distributed, Corps decision makers are required to ensure that all environmental protection statutes and requirements listed in Table SEIS-1 are met. Of the twenty statutes and requirements listed in the table however, slightly more than half remain to be met. Please review the general comments section for a synopsis of our major concerns and revise the subject table accordingly.

Page SEIS- 3 through 6, para 10 and 11 - The Executive Order on Flood Plain Management, EO 11988, directs Federal agencies to reduce flood loss risk; minimize impacts on human safety, health, and welfare; and restore and preserve the natural and beneficial values served by floodplains. While the proposed action would reforest a limited acreage of the floodplain (i.e., a maximum of 9,091 acres of private agricultural land below 87 feet, NGVD), it would also drain wetlands and perpetuate farming of frequently flooded, poorly drained floodplain wetlands above that elevation. Alternatives that would have avoided adverse and incompatible development were prematurely discounted and discarded. Although the proposed plan would reduce adverse floodplain impacts, it would not avoid or

minimize those impacts. On that basis, the Service concludes that the recommended plan fails to meet the spirit and intent of EO 11988.

Page SEIS-6, para 12 and 13 - The Executive Order on Wetlands, EO 11990, directs Federal agencies to avoid, to the extent possible, long-term and short-term adverse impacts associated with the destruction or modification of wetlands and to avoid direct or indirect support of new construction in wetlands if a practical alternative exists. The proposed action should be reformulated to significantly avoid and reduce adverse impacts to wetlands by dedicating the two-year floodplain as a NSFDRZ, instead of draining those cleared and forested wetlands above 87 feet in order to intensify marginal farming. The statement that impacts from the structural component were avoided by increasing the pumping elevation to 87 feet is inaccurate and misleading, since there are thousands of acres of wetlands above 87 feet that would be adversely impacted by operating the pumps. We agree that wetland impacts may have been reduced somewhat, but they were certainly not avoided. As such, we believe that the proposed plan also fails to meet the spirit and intent of EO 11990. We recommend that this section be revised to include the actual wetland acreage that would be impacted by implementing the recommended plan.

Page SEIS-11, para 29 - We concur with the implied goal of no-net-loss of natural resources. However, the Corps has opted to use conditions as they exist today as the baseline point for measurement of those impacts. This approach fails to consider the well-documented relationship between previous flood control/drainage and agricultural intensification in the Mississippi Alluvial Valley, which has resulted primarily from publically financed drainage and flood control projects. The Service believes that, at a minimum, the Corps should consider the initial point of reference for measuring project impacts on project area wetlands as the late 1950's. At that time, data were collected regarding environmental resources in the project area which resulted in the Comprehensive Review of the Mississippi River and Tributaries Project Report, transmitted to Congress on April 6, 1962. That report included a recommendation to acquire 70,000 acres of sump areas to "produce optimum flood control and fish and wildlife benefits," which was subsequently authorized by the Flood Control Act of 1965, but never implemented.

Page SEIS-11, para 30 - This paragraph lists plan objectives which do not coincide with those listed on page 43 of the main report. While some of the listed objectives are similar, others are completely different. Most importantly, specific objectives used to provide the basis for plan formulation, impact assessment, and plan selection are not identified. Absent such explanations, it is impossible to validate the analysis or determine if the logic applied was appropriate. The differing objectives raise concerns about the extent to which confusion and misunderstanding of study objectives could have translated into mistakes in plan formulation and analytical errors. The final document should be revised to correspond with the same set of objectives.

Page SEIS-12, para 33 and 34 - These paragraphs state that traditional nonstructural measures were included in the alternative plan formulation process. Those traditional nonstructural measures included such obviously structural solutions as levees or walls around structures, raising structures in place, structure replacement, and waterproofing

walls and openings. While such measures are traditional structural solutions to urban flooding, they are not appropriate to the non-structural reduction of agricultural flooding and drainage. Furthermore, they do not meet the criteria that define nonstructural measures.

Page SEIS-15, para 36 - The last sentence of this paragraph refers the reviewer to Table 4 on page 54 of the main report to review why several “nonstructural” measures were eliminated from further consideration. However, it appears that, although the referenced table is labeled as an economic analysis summary of nonstructural measures, the measures analyzed appear to be, in fact, structural means and methods to provide flood damage reduction. Furthermore, the details and methodology for that analysis are absent. Page 53 paragraph 134 of the main report discusses the table, but does not discuss how costs, benefits, and benefit ratios were derived. References are made to hydrologic data, computer-based elevation models, and other computer-based models used to determine first costs, annual costs, annual benefits and benefit-cost ratios. Again, no discussion of exactly how these models function and how they were applied to the data is offered. Without such discussion, it is impossible to verify the data; accordingly, we recommend that these shortcomings be rectified in the final document.

Page SEIS-16, para 40 - This paragraph should explain the relationship between elevation (e.g., 87 feet, NGVD) and the areal extent of flooding (e.g., the 1-year floodplain) in a more precise and spatially accurate manner. The Corps’ explanation would consistently and erroneously lead one to believe that flood protection will accrue to all lands in the project area above 87 feet which is patently false. Because this is the only reference regarding that relationship in the entire document, we believe the average reader will not keep this critically important relationship in mind when reviewing other portions of the text. Accordingly, we suggest that a series of maps that spatially depict this relationship be included and referred to frequently when the text refers to elevational data in reference to both backwater and headwater flooding.

Page SEIS-16, para 42 - Again, this paragraph refers to the main report where Tables 5 and 6 are presented. Once again, the pattern of simply presenting numbers without explanation is evident. There is no discussion of how the costs and benefits were derived, nor are the categories defined. Furthermore, there is no reference to where these data or discussions can be found. These shortcomings should be rectified in the final document.

Page SEIS-21, para 53 - This paragraph discusses portions of the final array of alternatives and states that three operational measures were included as project features, yet the discussion that follows only lists two operational features. The final document should be revised to clarify this discrepancy.

Page SEIS-23, para 58 - This sentence provides the rationale for the Corps’ dismissal of the Shabman approach to non-structural flood control from further consideration. The reasons given are partially discussed in paragraph 57; however, the reader is also informed that the alternative “does not meet the overall objectives of the study,” yet the objectives that were unmet and the Corps’ analytical basis for that conclusion are not provided. Such an analysis should be presented in the final document to support this assertion. Moreover, our general

comments above discuss the OCE policy decision on the use of carbon sequestration reforestation and nutrient load reduction to economically justify non-structural measures. That general comment also explains the fundamental reasons for our nonconcurrence with the OCE decision.

Page SEIS-23, para 59 and Table SEIS-3 - The last sentence of this paragraph and the table subjectively evaluate the various plans. As such, they are more justification than evaluation. Given the purpose of the DSEIS, we recommend that these subjective references and the table be deleted from the final document.

Page SEIS-24, para 60 - This paragraph initiates the discussion of the alternatives and is supposed to describe the no action alternative. Unfortunately, very little is said about baseline conditions and the future without condition, or any of the underlying assumptions. The Corps assumes that land-use conditions will continue without a project exactly as they exist today. The Service does not agree with that position. The Corps acknowledges this critically important area of disagreement, and erroneously refers the reader to Appendix 2 for a discussion of our position, which was not included. Please refer to the general comments section above to review our concerns regarding the baseline and future without-project conditions.

Page SEIS-25, para 62 - This section describes Plan 3 inconsistently with the description of plan 3 provided on page 70 of the main report. The time intervals of the pumping operational elevation do not match, and the description in the main report includes the reestablishment of forest on 27,435 acres of open land. These discrepancies need to be rectified in the final report. Corresponding portions of the analyses for plan 3 should be verified and updated as necessary.

Page SEIS-28, para 68 - The reviewer is referred to Table SEIS-4 where a summary comparison of plans is presented. Since no data are presented for plan 1, comparisons with other plans are not possible. The table should be recast to supply relevant data that will facilitate a comparison of all alternatives, including "No Action."

Page SEIS-28, para 69 - The last two sentences of this paragraph refer the reader to Table SEIS-5 and present economic conclusions. The pattern of numerically displaying data without the benefit of discussion or a reference to an appendix that fully describes the methodology is once again evident. Please see our previous comments regarding page SEIS-16, paragraph 42.

Pages SEIS-30 through 33, para 70-72 - This section of the DSEIS presents an unsubstantiated justification for the Corps' selection of Plan 5, as the recommended plan. In contrast to CEQ's Implementing Regulations, this section appears to justify a decision that has already been made, rather than allowing decision makers to evaluate alternatives and make decisions based on a full understanding of environmental consequences. Sections 1501(c) and 1502.14 of CEQ's regulations clearly explain that the purpose of NEPA and the EIS is to present alternatives and their respective impacts in a comparative form that sharply define the issues and provides a clear basis for choice among options. In contrast, this section presents strong evidence of the Corps' attempt to justify their selection of Plan 5. We

recommend that the Corps reinstate the NEPA planning process, follow the spirit and intent of the Act, and objectively reformulate and re-evaluate all reasonable alternatives. Only after all alternatives are formulated correctly and evaluated equally should decision makers determine which alternative is the preferred approach.

Page SEIS-33, para f - This sentence states the recommended plan supports efforts to recover the pondberry, a federally listed endangered plant. In an October 16, 2000, letter to the Corps District Engineer, the Service presented a detailed review of Appendix 14 which is the Corps' Biological Assessment of impacts of the project on endangered and threatened species. In that letter, the Service concurred that the recommended plan will not likely adversely affect the Louisiana black bear, and concluded that further consultation for that species was not required. However, the Service did not concur with the Corps' determination that the project is not likely to adversely affect pondberry. The Service concluded that the recommended plan is likely to adversely affect pondberry and recommended that the Corps initiate formal consultation to ensure it will not jeopardize the continued existence of pondberry, as required by Section 7(a)(2) of the Endangered Species Act. We recommend that this sentence be removed from the document, and that the final document be modified to accurately reflect the status and outcome of the consultation process.

Page SEIS-35, para 75 - This paragraph states that the benefits for Plan 5 were updated based on 1999 crop budgets and 1999 current normalized prices, which are presented in Table SEIS-6. Previous discussions in paragraphs 69-71 stated that data presented in Table SEIS-5 were used by the Corps to select their recommended plan. Therefore, data used by the Corps to select a plan were outdated and the plan selection process was flawed. Section 1502.14(b) of CEQ's Implementing Regulations clearly indicate that all alternatives should be treated in a similar manner, which was clearly not true in this case. We recommend that data for all plans be updated to the same level, and that evaluations be completely displayed in the final compliance documentation .

Page SEIS-35, para 78 - This paragraph states that initiation of pumping at 87 feet avoids adverse effects to terrestrial, wetland, waterfowl and aquatic resources below 87 feet NGVD. That statement is true to some degree for any selected elevation; however, it is not true that those effects will be avoided throughout the 1-year floodplain. The degree to which this is true for all plans and their pumping elevations, should be clarified and a comparative analysis should be provided in the final documentation.

Page SEIS-37, Table SEIS-7 - Data displayed in the table are incorrect. For example, the acreage figure presented for aquatic resources is 72,316. The correct figure for the 2-year average seasonal flooded acreage is 129,013. Additionally, it is apparent that here and throughout the evaluation, the Corps characterized aquatic impacts solely on the basis of spawning impacts. The Service believes that aquatic impacts should have been characterized on the basis of both spawning and rearing impacts combined. Terrestrial impacts are characterized by evaluating the combined life requirements of all evaluation species, and aquatic impacts should be characterized in the same manner. We recommend that spawning and rearing impacts be combined for the purpose of treating aquatic impact characterizations. Data in the table and all subsequent evaluations should be corrected, based on an accurate evaluation of aquatic impacts.

Page SEIS-39, para 79 - This paragraph states that reforestation of 62,500 acres of agricultural land as proposed in the recommended plan will provide a net gain for environmental resources, a premise with which the Service strongly disagrees. First, that plan does not minimize adverse impacts to fish and wildlife resources. Secondly, because the reforestation plan is so inadequately formulated and presented, its potential for implementation is almost nil. For example, there are only 9,091 acres of cleared, privately owned land below 87 feet. Thus, there is no assurance that the desired acreage figure would be attained. The Service recommends that a risk assessment of the reforestation measure be conducted to substantiate this conclusion. Furthermore, the recommended plan would result in water-level reductions that would have the effect of expanding and intensifying agriculture in yet more flood-prone and poorly drained areas. The measure would also serve as a powerful disincentive to possible willing sellers, rather than promoting the reforestation effort. In fact, there is every likelihood that the recommended plan, its reforestation measure notwithstanding, will significantly reduce -- if not summarily end --the current landowner-driven wetland reforestation trend in the Yazoo Backwater Area.

Page SEIS-40, para 83 and 84 - This section states that, if a minimum threshold to achieve no-net-loss of environmental values is not achieved from willing sellers, the remaining acreage would be acquired as mitigation in fee title and refers the reader to Table SEIS-8. The DSEIS does not explain how this minimum threshold level was determined. Additionally, 12,980 acres is presented as the amount required to achieve no-net-loss of environmental resources for the recommended plan. No explanation of how this figure was derived is presented. The final document should present that methodology, and clarify whether this is the acreage actually targeted for reforestation under the recommended plan.

Page SEIS-41, para 86 - This paragraph states that establishment and survival monitoring of seedlings will cease after 3 years, and that land use monitoring will occur every 5 years through the use of remote sensing techniques. This section does not discuss how easement compliance will be assured or how easement violations will be remedied. These easement compliance issues should be fully discussed in the final document.

Page SEIS-44, para 97 - Despite the recent restoration trend, the Corps predicts that no changes in land use for future without-project conditions are expected. No increase in reforestation is predicted by the Corps "...because the ceilings for enrollment in Sharkey and Issaquena Counties have been reached," despite the fact that more than 9,000 acres of additional restoration have been quantified since the Service's September 1999, future without-project projection was provided. Although not explained, the ceilings referred to are associated with Federal conservation programs administered by the U.S. Department of Agriculture. Moreover, we are aware of efforts by the Congress to substantially raise those caps. In contrast to the Corps' projection, the Service estimates that over the 50-year project life, 43,432 acres of agricultural lands would be reforested in the study area (again, more than 9,000 acres of which have already occurred). This information and the rationale for this Service position, although referred to, was not included in the DSEIS. In fact, careful review of Table SEIS-10 reveals that the Corps has inaccurately incorporated the Service's data in that table. We believe the data presented in that table for the FWS Future Without-Project acreage for soybeans should be 161,855 and the figure presented for Bottom-land Hardwood should be 247,650.

Page SEIS-46, para 98 and Table SEIS-11 - Data referred to by this paragraph and contained in Table SEIS-11 are inaccurate. A comparison to those figures presented in Table SEIS-10 reveals discrepancies among the numbers presented. More importantly, the data displayed in this table should be presented based on the differing opinions of the Corps and the Service regarding most probable land use without the project. This table should be modified to accurately depict both the Service's and Corps' alternative without-project futures.

Page SEIS-49, Table SEIS-12 - Data presented in the table are in error. The data presented for the Service's projection of future without-project conditions for soybeans in Reach 1 should be 0 not 13, and the correct figure for BLH should be 58, not 54. Similarly, data for soybeans and BLH in Reach 2 should be 21 and 41 respectively, not 26 and 36 as presented. These data should be corrected in the final document.

Page SEIS-49, Table SEIS-13 - Data presented in this table are inexact. Data for DUD/ac and the Corps future without-project projection are correct, however, the data for the Service future without-project was not accurately presented. Data for the Corps' projection was derived from Table 7 of Appendix 11. Data for the Service's projection should have been derived from Table 10 of Appendix 11. Therefore the table should appear as follows:

Land Use	DUD /acre	Reach 1		Reach 2		Reach 3		Reach 4	
		Corps	FWS	Corps	FWS	Corps	FWS	Corps	FWS
Fallow	1037	186	186	109	109	51	51	203	203
Rice	580	510	510	370	370	26	26	101	101
Soybean	253	603	0	1,002	457	256	256	633	633
BLH	57	2,088	2,691	349	894	1,815	1,815	836	836
Total	N/A	3,387	3,387	1,830	1,830	2,148	2,148	1,773	1,773

Page SEIS-50, Table SEIS-14 - Since data in this table are dependent on the data in Table SEIS-13 (see above comment), the data presented are erroneous. The table should appear as follows:

Reach	Average Seasonal Duck acres	Baseline DUD	Corps Future w/o DUD	FWS Future w/o DUD
1	3,387	760,257	760,257	750,609
2	1,830	601,032	601,032	592,312
3	2,148	236,190	236,190	236,190
4	1,773	476,892	476,892	476,892
Total	9,138	2,074,371	2,074,371	2,056,003

Pages SEIS-50 through 52, para 107-109 and Table SEIS-16 - Data presented in the discussion of terrestrial resources in paragraphs 107 through 109 and corresponding data presented in the referenced table conflict; the data presented in the table do not agree with data previously presented in the DSEIS. Paragraph 107 states “However, 273,398 acres of bottom-land hardwoods (including swamp cover type) provide the highest quality and most stable habitat.” Addition of the acreage figures for those cover types from Table SEIS-10 yields an acreage figure of 233,869, yet table SEIS-16 utilizes an acreage figure of 197,200 for forested lands. There is an obvious discrepancy between the reported acreages of forested habitat types and the acreage utilized for computation of impacts.

Assuming that the Corps’ acreage figure reported in Table SEIS-16 is correct, the data presented in the table are in error. Based on the 197,200 forested acreage figure reported in the table and our verification of the computations, we believe the table should read as

Evaluation Species	Corps Forested Acres	FWS Forested Acres	Baseline HU	Corps Future Without-Project AAHU	FWS Future Without-Project AAHU
Non-water Dependent	197,200	233,104	577,796	577,796	688,186
Wood Duck	66,851	79,022	32,088	32,088	32,088
Mink	60,540	71,563	7,265	7,265	13,333
Total			617,149	617,149	733,607

follows:

Page SEIS-53, Table SEIS-17 - Acreage figures presented in the table are not supported by a discussion of the methodology utilized to derive them. We recommend that a discussion of the methodology utilized to arrive at those acreages be presented in the final document.

Pages SEIS-54 through 56 and Tables SEIS-20, 21, and 22 - Data discussed in paragraphs 114, 115, and 116 (which are displayed in Tables SEIS 20, 21 and 22) do not match the data presented in technical Appendix 13. Additionally, the data presented in those tables are incorrect and present an inaccurate projection of the Service’s future without-project analysis. We recommend that the acreage figures presented in Tables SEIS-20 and 21 be the product of the average flooded acres currently displayed, and the relative distribution by reach presented in Table SEIS-19. This approach would allow for a rapid validation of the acreage presented for the baseline and Corps’ future without-project projections by reference to Appendix 13.

The Corps has also inaccurately interpreted the Service’s projections of future without-project conditions. In so doing, they inaccurately and inappropriately added 30,293 acres, divided equally, to the acreage for reaches 1 and 2. The correct acreage figure should have

been 35,904, and that acreage should have been distributed exactly in accordance with Tables 3a and 3b of the Service's September 1999 planning aid report.

In an effort to validate the data presented in Tables SEIS-20 through 22, we multiplied the average daily flooded acres by reach times the relative wetland distribution displayed in Table SEIS-19, and multiplied the result by the Wetland Functional Capacity Index (FCI) values for forested and farmed conditions to determine the Functional Capacity Units (FCU) displayed in the tables. Our validation revealed that computational errors were made, and that the data presented in Table SEIS-20 should be:

Reach	Average Daily Flooded Wetland Acres	Baseline FCU	Corps Future Without Project FCU	FWS Future Without Project FCU
1	15,658	83,615	83,615	139,225
2	2,160	11,534	11,534	66,553
3	14,106	75,324	75,324	75,324
4	3,210	17,144	17,144	17,144
Total	35,134	187,616	187,616	298,246

Similar treatment of the data in Table SEIS-21 would yield the following data:

Alternative	Acres Reforested		Corps Net Effect		FWS Net Effect	
	Corps	FWS	AAHU	Change %	AAHU	Change %
2	107,000	71,096	170,413	-27.6	286,871	39.1
3	0	0	(6,680)	-1.1	109,778	15.0
4	40,600	4,696	74,532	12.1	190,990	26.0
5	62,500	26,596	107,674	17.4	224,132	30.1
6	77,300	41,396	134,987	21.9	251,445	34.3
7	107,000	71,096	181,328	29.4	297,786	40.6

Because Table SEIS-22 is a summation of data in Tables SEIS-20 and 21, it should read:

Reach	Baseline FCU	Corps Future Without Project FCU	FWS Future Without Project FCU
1	96,756	96,756	143,825
2	24,891	24,891	71,629
3	79,053	79,053	79,053
4	18,401	18,401	18,401
Total	219,102	219,102	312,908

Pages SEIS-58 and 59, para 120 and 121, and Table SEIS-26 - The data in this table should be displayed by reach and broken down into two tables, one for spawning habitat and the other for rearing habitat. Table SEIS-26 for spawning habitat should read:

Reach	Average Daily Flooded Acres	Baseline HU	Corps Future Without Project HU	FWS Future Without Project HU
1	24,270	72,958	72,958	80,664
2	13,851	22,914	22,914	31,446
3	20,278	70,269	70,269	70,269
4	13,917	33,966	33,966	33,966
Total	72,316	200,107	200,107	216,345

Similarly Table SEIS-26 for rearing habitat should read:

Reach	Average Daily Flooded Acres	Baseline HU	Corps Future Without Project HU	FWS Future Without Project HU
1	47,426	62,304	62,304	67,269
2	22,867	12,026	12,026	16,704
3	34,075	43,694	43,694	43,694
4	24,645	22,858	22,858	22,858
Total	129,013	140,882	140,882	150,526

Those data should be combined and evaluated as the actual project impact on aquatic resources.

Page SEIS-67, Table SEIS-28 - The data displayed in the table cannot be verified or validated because there is no explanation of the methodology by which they were derived. The methodology utilized to produce the data in the table should be clearly and succinctly discussed in the final document. The data in the table SEIS-28 and in the text discussion would be clarified by the use of figures (maps) and actual acreage tables for each projection, as well as the percentage change expected to occur with each projection. We recommend that two figures (maps) presenting the data differences be produced, and that a table be displayed that depicts the acreage at baseline and at the project life (50 year) end-point for both the Corps' projections and the Service's projections.

Page SEIS-68, Para 143 and 144 and Table SEIS-29 - The data in the table and therefore the summary statements found in these paragraphs are incorrect. Again, there is no discussion regarding the methodology used to produce the data. Based on the discussion found in Appendix 11 and the inadequate explanation of the data found in paragraphs 143 and 144, we believe the data presented in the table are inaccurate and should be presented as follows:

Alternative	Seasonal Daily Acres Impacted	Seasonal Daily Acres Reforested		Corps Net Effect		FWS Net Effect	
		Corps	FWS	DUD ^a	Change	DUD ^a	Change
2	0	4,050	4,050	-824,505	-39.7	-534,061	-14.1
3	-836	0	0	-190,790	-9.2	99,654	4.8
4	-814	3,697	4,050	-936,609	-45.2	-646,165	-31.4
5	-353	3,902	4,050	-873,432	-42.1	-582,988	-28.4
6	1,302	4,708	4,050	-634,017	-30.6	-343,573	-16.7
7	1,451	4,778	4,050	-612,924	-29.5	-322,480	-15.7

a/ Includes the loss of 2,166 DUD from the clearing of 38 acres at the pump site on Plans 3 through 7.

Pages SEIS-69 and 70, para 145-148, and Table SEIS-30 - The discussion refers the reader to Appendix 12 and presents data directly from Table SEIS-30. We believe the data presented in the table are incorrect. Of the several methods utilized in this compliance documentation and its appendices to determine impacts, all typically quantify impacts by comparing future without-project conditions to future with-project conditions. In other words, a baseline level or index is determined and a specific value calculated. Projections of with-project conditions are made and a measure of that same index is calculated for the projected end of project condition. The net effect of the project is the difference between the two indices. If baseline starting conditions are different but impact effects are identical, applying a correction factor to one or the other of the end points should yield similar impacts. By starting with the data initially presented in the table and the logic discussed in the table's footnotes, we were able to determine that the data presented for the Corps' net effect is

displayed properly. However, the data presented for the FWS net effect is not correct, and we recommend that the table be revised as follows:

Alternative	Acres Reforested		Corps Net Effect		FWS Net Effect	
	Corps	FWS	AAHU	Change %	AAHU	Change %
2	107,000	71,096	170,413	-27.6	286,871	39.1
3	0	0	(6,680)	-1.1	109,778	15.0
4	40,600	4,696	74,532	12.1	190,990	26.0
5	62,500	26,596	107,674	17.4	224,132	30.1
6	77,300	41,396	134,987	21.9	251,445	34.3
7	107,000	71,096	181,328	29.4	297,786	40.6

Page SEIS-70 through 72, para 149 through 155, and Tables SEIS-31 and 32 - The discussion presents background information regarding wetland impacts and makes observations regarding the data displayed in the tables. Some of the data in the tables are in error. In table SEIS-31, the FCU figure for the FWS Net Effect presented for reach 6 is inaccurate. Rather than the 91,751 figure presented, our verification of the calculation revealed that figure to be 100,209. Additionally, it appears that the percentage change figures were erroneously calculated by using the Corps' baseline FCU rather than the FWS baseline FCU as the divisor in the computation. Therefore, all the percentage figures for the FWS Net Effect presented in the table are inaccurate.

In table SEIS-32, The data presented for both the Corps Net Effect and the FWS Net Effect impacts are inaccurate. We believe the table should read:

Alternative	Daily Acres Impacted		Daily Acres Reforested		Corps Net Effect		FWS Net Effect	
			Corps	FWS	HU	Change %	HU	Change %
2	0	0	0	0	0	0	0	0
3	(3,495)	(1,637)	0	0	(8,473)	(26.9)	(4,107)	(28.0)
4	(2,610)	(1,220)	0	0	(6,394)	(20.3)	(3,127)	(21.3)
5	(1,277)	(586)	0	0	(3,261)	(10.4)	(1,637)	(11.2)
6	1,000	490	0	0	2,090	6.6	892	6.1
7	1,697	817	0	0	3,728	11.8	1,660	11.3

Page SEIS-72 and 73, para 156 and 157 - These paragraphs set the stage for the following discussion of aquatic impacts. We believe the aquatic impacts should present a combined index of spawning and rearing requirements, as noted previously.

Page SEIS-73, para 158-159 and Table SEIS-33 - Again the discussion simply presents observations regarding net habitat unit impacts and percentage changes based on data presented in the table. We recommend the table be revised as follows:

Alternative	Daily Acres Impacted	Daily Acres Reforested		Corps Net Effect		FWS Net Effect	
		Corps	FWS	HU	Change %	HU	Change %
2	0	34,218	29,159	80,070	40.0	68,232	34.1
3	(23,539)	0	0	(55,223)	-27.6	(55,223)	-27.6
4	(18,037)	25,538	21,766	17,410	8.7	8,584	4.3
5	(10,998)	28,840	24,478	41,608	20.8	31,401	15.7
6	(4,712)	31,861	27,165	63,387	31.7	52,398	26.2
7	1,022	34,701	29,558	83,450	41.7	71,415	35.7

Page SEIS-74, para 161-162 and Table SEIS-34 - Here again, the discussion is largely comprised of observations regarding the percentage of change based on data presented in the table. We again question the accuracy of that data. We believe the table should be revised as follows, and that the text be revised accordingly:

Alternative	Daily Acres Impacted	Daily Acres Reforested		Corps Net Effect		FWS Net Effect	
		Corps	FWS	HU	Change %	HU	Change %
2	0	60,478	51,094	41,730	29.6	35,255	25.0
3	(40,391)	(40,391)	(40,391)	(27,914)	-19.8	(27,914)	-19.8
4	(29,676)	16,488	16,488	11,333	8.0	11,333	8.0
5	(15,073)	37,906	44,699	26,111	18.5	20,398	14.5
6	(3,043)	55,499	49,349	38,250	27.2	31,907	22.6
7	4,652	67,182	52,741	46,312	32.9	39,557	28.1

Page SEIS-75 and 76, para 163 thorough 166 - Our previous specific comment regarding the Corps' assessment of project impacts on the endangered pondberry plant apply here, as well.

Pages SEIS-78-80, para 174 through 177 and Tables SEIS-35, 36, and 37 - This section presents general observations regarding project impacts based on summary data presented in Tables SEIS-35, 36, and 37. The data in the tables do not treat all impacts and projections equally. The reported aquatics HU changes presented in Table SEIS-35 are based on spawning impacts only, and the rearing impacts appear to have been omitted. Moreover, a table presenting a summary of effects for all categories based on the Service's future-without project projections is missing. Table SEIS-36 is apparently based on a compilation of the data presented in table SEIS-35. Table SEIS-37 presents data for the Service's position, but a table similar to Table SEIS-35 is not displayed. A table similar to Table SEIS-35 should be constructed to present the Service's baseline comparison in order to verify the data presented in table SEIS-37. The discussion in this section and Tables SEIS-35, 36, 37, and the proposed new table should also be revised to reflect the detailed comments presented previously.

Page SEIS-82, para 182, and Table SEIS-39 - The text and table fail to discuss the relationship of the recommended plan with the present actions in the study area. We are specifically concerned with the Corps' failure to treat the Big Sunflower Maintenance Project within the context of formulating non-structural approaches to agricultural drainage in the Yazoo Backwater Area. Our concerns emanate from the obvious and inextricable hydrological and physiographic overlap between the two projects. Channel work on the Big Sunflower Project will impact approximately 80 percent of the Service-proposed NSFDRZ for the Yazoo pumps. We are particularly concerned that the proposed work on the Little Sunflower River will drain wetlands restored under the auspices of the Conservation Reserve Program (CRP) and Wetland Reserve Program (WRP), as well as a portion of Delta National Forest. Thus, there are substantial questions associated with the Corps' failure to consider and evaluate both projects, inasmuch as the recommended plans conflict with each other, and could have potential effects on the endangered pondberry. One of the principal issues to be addressed during a comprehensive re-evaluation of both projects would be the extent to which much of the channel work on the Big and Little Sunflower Rivers are actually justified.

Page SEIS-82, para 183 - This paragraph presents incorrect data for the WRP and CRP. According to our latest information, there are currently 24,132 acres enrolled in the WRP program and 9,223 acres enrolled in the CRP program. We recommend that these figures be revised in the final document, and that all relevant discussions, especially those for the future without-project conditions, be revised accordingly.

Page SEIS-84, para 184 - The statement that other Legislative authorities (Clean Water Act, etc) and Executive Orders have addressed wetland protection is incorrect. It is widely acknowledged that these initiatives have been minimally effective in reducing the losses of wetlands both nationally and in the Yazoo Backwater Area. The economics of row crop farming in concert with Federal agriculture programs have resulted in adverse impacts to 80 percent of the nation's wetlands. Implementation of the recommended plan will likewise reduce the extent of wetlands within the Corps' jurisdiction, leaving them open to subsequent unregulated and unmitigated conversion to non-wetland uses.

Page SEIS-88, para 192 and Tables SEIS-41 and 42 - The discussion refers the reader to the tables to review the compensatory acreage figure calculated and the respective mini-

minimum threshold of acreage that would need to be reforested to reportedly achieve a no-net-loss of environmental resource value. The calculations to produce the data reported in the tables were inaccurate, and the data reported are in error. Table SEIS-41 should read:

Alternative	Compensatory Mitigation (acres)	Minimum Threshold (acres)
Plan 1	None	None
Plan 2	None	None
Plan 3	27,832	27,832
Plan 4	None	21,540
Plan 5	None	13,273
Plan 6	None	5,828
Plan 7	None	388

Table SEIS-42 should be revised to read:

Alternative	Compensatory Mitigation (acres)	Minimum Threshold (acres)
Plan 1	None	None
Plan 2	None	None
Plan 3	30,244	30,244
Plan 4	None	23,415
Plan 5	None	14,334
Plan 6	None	6,342
Plan 7	None	1,705

Page SEIS-89, para 193 and 194 - The acreage figures presented in this discussion are inaccurate and should be revised. Those figures are based on the discussion found in Appendix 1. Careful review of that Appendix reveals that the calculations used to generate those figures are also flawed. Therefore, we believe the acreage of reforestation required to offset terrestrial losses from the Yazoo Backwater Levee is 3,696, not the 3,617 figure presented in the text. Additionally, the 481 acre figure presented as required to offset the 296 acres cleared as part of the inlet and outlet channel construction in 1987 was inaccurately rounded off to 481 acres, rather than the correct figure of 482 acres. Therefore, the minimum acreage of reforestation required would be 18,512, rather than the 17,078 figure presented in paragraph 194.

Page SEIS-91, para 206 - The Service strongly disagrees with the conclusion that the recommended plan represents a balanced approach to solving the flood damage-reduction problem, and meeting the environmental opportunities in the study area. We believe that implementation of a non-structural Federal water resource development project under the authority of the Mississippi River & Tributaries (MR&T) Project that will: (1) provide a water

and related land resource base sufficient to support economically and ecologically sustainable development; (2) result in a substantial realignment of land use with land capability; and, (3) in terms of policy, purpose, and result, reflect “new directions” in the MR&T approach to floodplain management, wetland conservation, and air and water quality improvement, would provide a truly balanced solution to the long-standing and nationally significant water and related land resource problems in the Yazoo Backwater Area.

Appendix 1 - Mitigation

Page 1-11, Table 1-5 - Data presented in this table do not match the corresponding data presented in Table SEIS-30 of the DSEIS, nor the data presented in Table 18 of Appendix 12 which are purportedly the basis for this table. It appears from the title, that this table should present the net hydrologic impacts and reforestation benefits. We recommend that the table be revised as follows:

Plan	Net Change in Average Annual Habitat Units						
	Barred Owl	Gray Squirrel	Carolina Chickadee	Pileated Woodpecker	Wood Duck	Mink	Total
1	0	0	0	0	0	0	0
2	31,653	45,403	45,088	24,677	20,415	3,177	170,413
3	0	0	0	0	(5,615)	(957)	(6,572)
4	12,655	18,152	18,026	9,866	13,070	2,871	74,641
5	19,481	27,944	27,750	15,187	14,400	3,019	107,782
6	24,094	34,561	34,321	18,784	14,983	2,625	129,368
7	33,352	47,840	47,508	26,001	24,047	2,689	181,436

This table is also described in paragraph 24 to depict the net result of reforestation. However, the table’s title implies the data displayed are a combination of the data displayed in Table 1-4 and the reforestation impacts; however, the data depict reforestation impacts only. We recommend that the text describing Table 1-5 be corrected in the final compliance documentation to reflect that the table presents total net impacts, and that the table be corrected as outlined above.

Page 1-13, para 28 - This paragraph discusses data presented in Table 1-6 and points out that three plans will cause a reduction of wetland acreage. Objective (f) of the Corps’ planning objectives states “Provide, at a minimum, no net loss of natural resources.” Based on the data presented in table 1-6, those three plans would fail to meet the Corps’ stated objective.

Page 1-14, Table 1-7 - Some of the data presented in the table are incorrect. Based on our verification of the data, the last three columns should read:

Alternative	Total FCU Change	Total FCU/ Total FCI	Mitigation Acres Required
1	0	0	0
2	77,919	32,602	0
3	(52,754)	(22,073)	(22,073)
4	23,783	9,951	0
5	51,995	21,755	0

Page 1-21, para 42 and Table 1-13 - The discussion implies that Table 1-13 is a summary of impacts for all plans. Our review of those data revealed that the Aquatic AAHU impacts data are based solely on spawning habitat impacts. Discussions in Appendix 10 indicate that the spawning acreage also supports fish rearing. We are concerned that aquatic impacts have been significantly underestimated due to this approach. If those waters provide both spawning and rearing functions, then spawning and rearing impacts are additive. Because determinations of terrestrial impacts were handled in an additive manner, fisheries impacts should be handled similarly.

Page 1-25, para 52, 53, and 54 - The discussion in these paragraphs reviews the calculations for the reanalysis of mitigation requirements for the Lake George area. Some of those calculations were inaccurate, and the correct additional mitigation requirement is 3,696 acres.

Pages 1-25 and 1-26, para 55 - Calculations for determining the mitigation requirement for previous clearing at the pump site were improperly rounded down; the correct figure should be 482 acres.

Page 1-27 and 1-28, para 56 through 59, and Tables 1-15 and 1-16 - The discussion and tables should be corrected based on our previous specific comments on the applicable parts of the DSEIS outlined above.

Page 1-29, Table 1-17 - Because of the previously mentioned calculation errors, the data displayed in this table are also incorrect. If the corrections for the pump structure are applied, then the figure will change from 481 to 482, and the figure presented for the Lake George area will change from 3,617 to 3,696; the correct result for total acreage to be acquired will therefore be 17,158 rather than 17,058.

Page 1-45, para 100 - The acreage figure (4,098) presented is incorrect. Based on the preceding comments the correct figure is 4,178.

Page 1-47, Table 1-22 - The data presented in the table are inaccurate. The revised table should read as follows:

Alternative	Compensatory Mitigation (acres)	Minimum Threshold (acres)	
		Corps	FWS
1	None	None	None
2	None	None	None
3	27,832	27,832	30,244
4	None	21,540	23,415
5	None	13,273	14,334
6	None	5,828	6,342
7	None	388	1,705

Pages 1-51 through 1-56 - The discussion contained herein recounts the status of mitigation associated with various projects both within and outside the project area and the State of Mississippi. We recommend that all projects not directly related to the Yazoo Backwater Reformulation Study area (at a minimum those detailed in paragraphs 116, 118, 119, 120, and 121) be deleted from the document, as they are not germane to the issue of unmet mitigation for the Yazoo Basin projects. This is especially true inasmuch as non-structural flood damage reduction must occur within the project area to achieve any reduction in flood damages.

Summary Comments

As stated in the General Comments, the DSEIS and related documents are inadequate in several areas, including the use of unsubstantiated assertions, the lack of adequate explanations of analytical methods, the use of inaccurate and inappropriate methodologies, the inadequate formulation, evaluation, and unequal treatment of alternatives, and possible precedent-setting, nationally significant departures from well-established national environmental laws, regulations, and policies.

The recommended plan also fails to meet numerous water development planning criteria contained in the Corps' Principles and Guidelines for Water and Related Land Resource Development Planning, including: (a) failure to fully meet the Office of Management and Budget's reformulation directive; (b) failure to fully address related national environmental legislation, including the Clean Water Act, Endangered Species Act, and the Fish and Wildlife Coordination Act; (c) failure to address the planning concerns, goals, and objectives presented by the Service; (d) presentation of incomplete and inaccurate characterizations of baseline and future without-the-project conditions; (e) failure to incorporate separable, spatially explicit non-structural flood control features; (f) failure to consider and quantify, in the assessment of cumulative impacts, the well-documented relationship between flood control/drainage and agricultural expansion and intensification in the Mississippi Alluvial Valley; (g) failure to completely and accurately characterize environmental problems and concerns; (h) failure to include an analysis of the feasibility and viability of the Corps' proposed "environmental features;" (i) failure to consider the catastrophic impacts of the Project

Design Flood in the formulation, assessment, and evaluation of alternatives; and, (j) failure to consider alternatives designed to promote economically and ecologically sustainable development in concert with Project Design Flood protection measures.

The deficiencies and inadequacies of the DSEIS coupled with the planning process-related deficiencies previously noted, substantiate our conclusion that the recommended plan does not meet the needs of the Yazoo Backwater Area and that the environmental compliance documents fail to meet CEQ's applicable Implementing Regulations and policy guidance. Accordingly, the Service recommends that the planning process be reinitiated. Non-structural alternatives that will fully address the Service's planning goals and objectives should be formulated and evaluated, and a new draft supplemental EIS should be subsequently be prepared and circulated for review.

Based on our findings and concerns, and depending on the Corps' decision to proceed with either this proposal or any similar plan selected for inclusion in the final statement, we may refer this project to CEQ under Section 1504 of the Council's Regulations for Implementing the Procedural Provisions of NEPA. The Service wishes to further coordinate with the Corps at the earliest possible time in order to reach a solution to our issues and concerns that could preclude the necessity for referral. Coordination can be initiated by contacting the Yazoo Basin Team Leader, U.S. Fish and Wildlife Service, Vicksburg, Mississippi, at 601/629-6600.